

REMARKS

I. Indefiniteness Rejections

Claims 3, 4, 8, 11, 12, 15, 17 and 18 stand rejected under 35 U.S.C. §112, second paragraph for indefiniteness. This rejection has been overcome by the claim amendments and for the following reasons. Claims 3 and 11 have been amended to recite that the organic luminous layer includes "a polymer dispersing a low molecule therein", thereby specifying that the polymer contains another material, namely the low molecule as described at pages 10-14 of the specification.

Claims 4 and 12 have been cancelled and the rejection thereof is now moot. The formula shown for Ir(ppy)₃ has been corrected by presentation of new claims 25-27 (corresponding to original claims 8, 15 and 18) and on page 12 of the specification. The formula of Ir(ppy)₃ is a well known shorthand for an iridium complex having three phenyl pyridine ligands. The typographical errors in the structural formulas for Ir(ppy)₃ are now corrected. No new matter has been added. Finally, the typographical error in claim 17 has been corrected. Accordingly, the indefiniteness rejection should now be withdrawn.

New claims 25-27 correspond to original claims 8, 15 and 18, respectively, and are in compliance with 35 U.S.C. §112. Allowance of claims 25-27 is respectfully requested.

II. Prior Art Rejections

In the Office Action, the Examiner noted that the use of the term "or" in the claim language allowed claims to be interpreted to cover a device which is capable of being driven as a liquid crystal display device or an electroluminescent display device. Moreover, the Examiner indicated that even if the claim language were to clearly require that the device was capable of being driven as both a liquid crystal device and electroluminescent display device, the applied art would still be applicable. She asserts that the same structure and composition of the present invention is present in the devices of the prior art, and that the prior art devices would inherently be capable of being driven as both an electroluminescent device and a liquid crystal display device.

However, as noted hereinafter, the cited art fails to teach or suggest an organic electroluminescent display device that is driven as a liquid crystal device at an applied voltage less than a light emission initiating potential of an organic luminous layer and that is

driven as an electroluminescent display device at an applied voltage that is higher than the light emission initiating potential of the organic luminous layer.

A. Hikmet Patent

Claims 9, 10, 13, 14, 16, 17 and 19 stand rejected under 35 U.S. §102(b) for anticipation by U.S. Patent No. 5,748,271 to Hikmet et al. Applicants respectfully traverse this rejection. The Hikmet patent discloses an electroluminescent device having an anisotropic active layer that includes oriented electroluminescent compounds and liquid crystalline compounds. The electroluminescent device does not require a polarizing plate in an LCD. However, because of the fixed orientation of the liquid crystal layer, the electroluminescent device of the Hikmet patent cannot be driven as a liquid crystal display device. Liquid crystal is poured into a gap between the oriented layers and then is solidified. The liquid crystal layer is fixed with a predetermined orientation, thus the device cannot function as a liquid crystal by application of a driving voltage. The Hikmet device only operates in an electroluminescent (EL) mode.

In contrast, the liquid crystal layer of the present invention is sandwiched between orientation layers, but the orientation of the liquid crystal itself is not fixed. As a result, the present invention can be switched between an electroluminescent mode and a liquid crystal display (LC) mode in response to the magnitude of the applied voltage. The differences between operation of the present invention and operation of the Hikmet device are summarized in the following table.

Application Voltage	The Invention	Hikmet
Off	No image	No image
Voltage lower than a light emission initiating potential	LC mode	No image
Voltage higher than a light emission initiating potential	EL mode	EL mode

The claimed device does not have the same structure/composition as the Hikmet device. Independent claims 9 and 16 require an organic luminous layer including a liquid crystal substance. Application of a minimum voltage excites the luminous layer so that the luminous layer is driven in an EL mode. When the applied voltage is lower than the minimum (the initiating potential), the luminous layer is not excited and the luminous layer

instead is driven in an LC mode. The Hikmet device has a fixed active layer that is only driven in the EL mode. Accordingly, the structure and composition of the device of claims 9 and 16 are not anticipated or rendered obvious by the Hikmet patent. Likewise independent claim 19 requires that the display device is driven as an LC device or EL device depending on the magnitude of the applied voltage. The Hikmet patent does not teach or suggest a device having an active layer composition that is drivable in both of the LC and EL modes. Therefore, claims 9, 10, 13, 14, 16, 17 and 19 define over the Hikmet patent.

B. Hanna Patent

Claims 1-3, 6, 7, 9-11, 14, 16, 17 and 19 stand rejected under 35 U.S.C. §102(b) for anticipation by U.S. Patent No. 6,218,061 to Hanna et al. Applicants respectfully traverse this rejection for the following reasons.

The Hanna patent is directed to a structure having the following layers as shown in Fig. 11 thereof: glass substrate 21, transparent electrode 13, LC layer 23, second glass substrate 21, polarizing film 22, charge-transport layer 14, charge generation layer 14' and second transparent electrode 13. The surfaces of electrodes 13 are not oriented and as such the device of the Hanna patent cannot operate as a liquid crystal display device. The present claims require that the claimed device has a structure and composition for operation as both an electroluminescent device and a liquid crystal device. Accordingly, the claims define thereover.

Additionally, independent claims 1, 9 and 16 require a substrate on which the electroluminescent device is positioned and a polarizing plate positioned on the opposing side of the substrate. In contrast, the polarizing film of Hanna is sandwiched, along with the LC layer, between the electrodes. The structures of claims 1, 9 and 16 are distinguishable from those disclosures in the Hanna patent. Therefore, claims 1-3, 6, 7, 9-11, 14, 16 and 17 further define thereover.

C. WO '660 and Okada Patents

Claims 9-11, 14, 16 and 19 stand rejected under 35 U.S.C. §102(a) for anticipation by WO 00/36660. Claims 1, 5, 9, 13, 16 and 19 stand rejected under 35 U.S.C. §102(e) for anticipation by U.S. Patent No. 6,858,271 to Okada et al. Accompanying this amendment is a translation and verification thereof of the priority document No. 2000-128766 having a perfected priority date of April 28, 2000. The WO '660

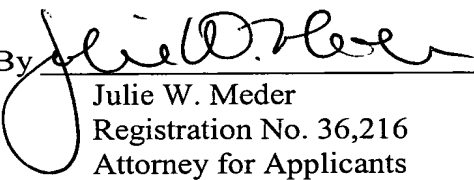
Application No. 10/650,361
Paper Dated: June 2, 2006
In Reply to USPTO Correspondence of February 27, 2006
Attorney Docket No. 2204-031579

application was filed on December 15, 1999 and published on June 22, 2000; it is not prior art to the present application. The Okada patent issued on February 22, 2005 on an application filed September 7, 2000; it is not prior art to the present application. Withdrawal of the rejections based on WO '660 and the Okada patent is respectfully requested.

In view of the foregoing, claims 1-3, 5-7, 9-11, 13-17 and 19 remain in the application along with new claims 25-27, and are believed to define over the prior art of record and be in condition for allowance.

Respectfully submitted,

THE WEBB LAW FIRM

By 
Julie W. Meder
Registration No. 36,216
Attorney for Applicants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219
Telephone: 412-471-8815
Facsimile: 412-471-4094